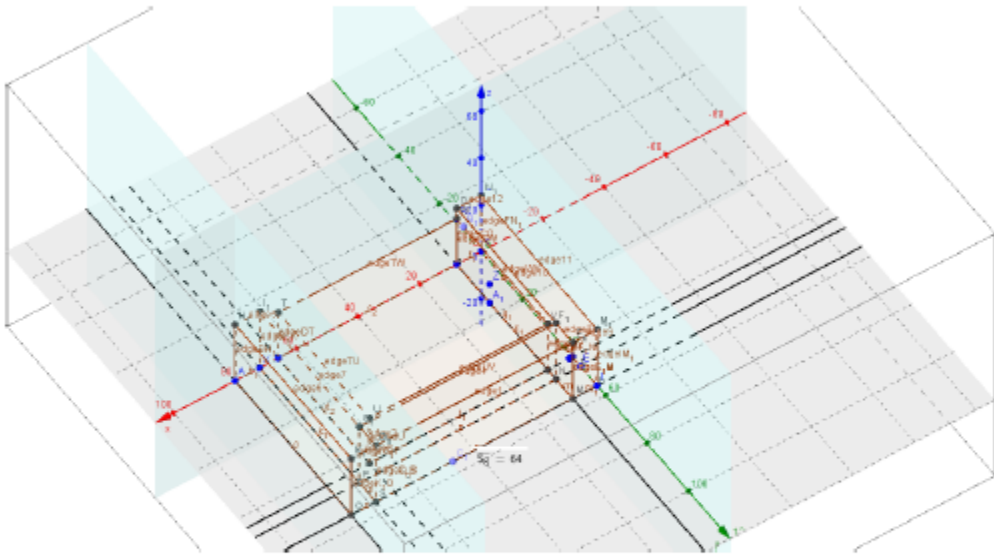


Oil Tank Solutions

AB

The back wall is the most pressing constraint. There is only about 80 inches of total room available. In those 80 inches, we need to fit 2 bricks (16 inches total), the length of the tank (46 inches), and an additional foot for the water valve (12 inches). That sums to a length of 74 inches on the outside, so everything will fit, with a length within the blocks of 58 inches. Another limitation is placed on all of our dimensions by the fact we're making this out of cinderblock. All of the dimensions must be divisible by 8 as to avoid having to cut the blocks.



In order to accommodate the width of the air vent and provide the additional 8 inches needed beyond the physical unit, the width must be at least 44 inches. If we have internal lengths 58 and 44, to have a volume of 30 cubic feet (215 gallons), the height must be at least 21 inches.

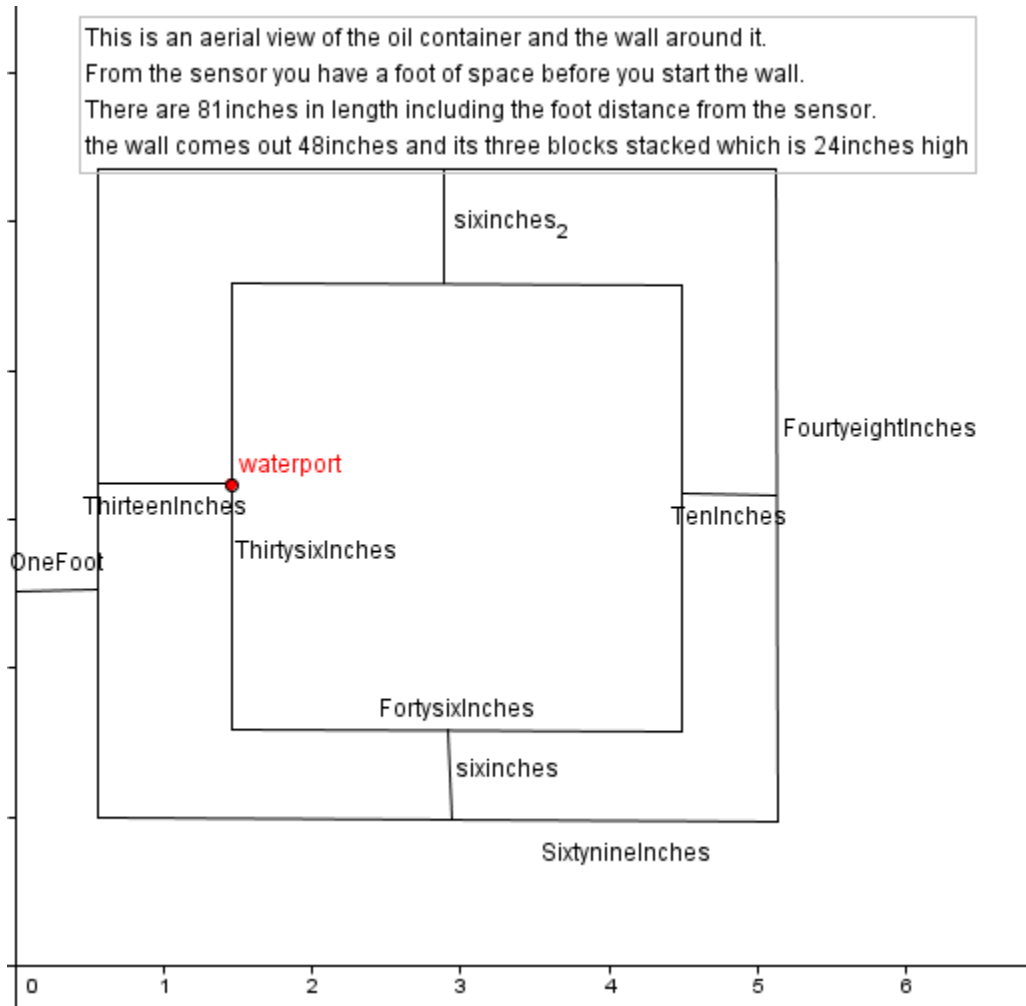
$$30 \text{ feet}^3 * 1728 \frac{\text{inches}^3}{\text{foot}^3} = 51840 \text{ inches}^3$$

$$51840 \text{ inches}^3 / 58 \text{ inches} / 44 \text{ inches} \approx 21 \text{ inches}$$

Cinderblocks are 8 inches wide, 8 inches tall, and 16 inches long. This means the wall must be 3 bricks tall. The length requirement of an external width of 74 inches can be met with 5 bricks and the width requirement (44 inches) can be met with 3 bricks. We need one wall that is as long as the length, and will contain 15 bricks (length * height), and two walls running the width, each requiring 9 blocks (width * height). This means the design requires 33 cinderblocks.

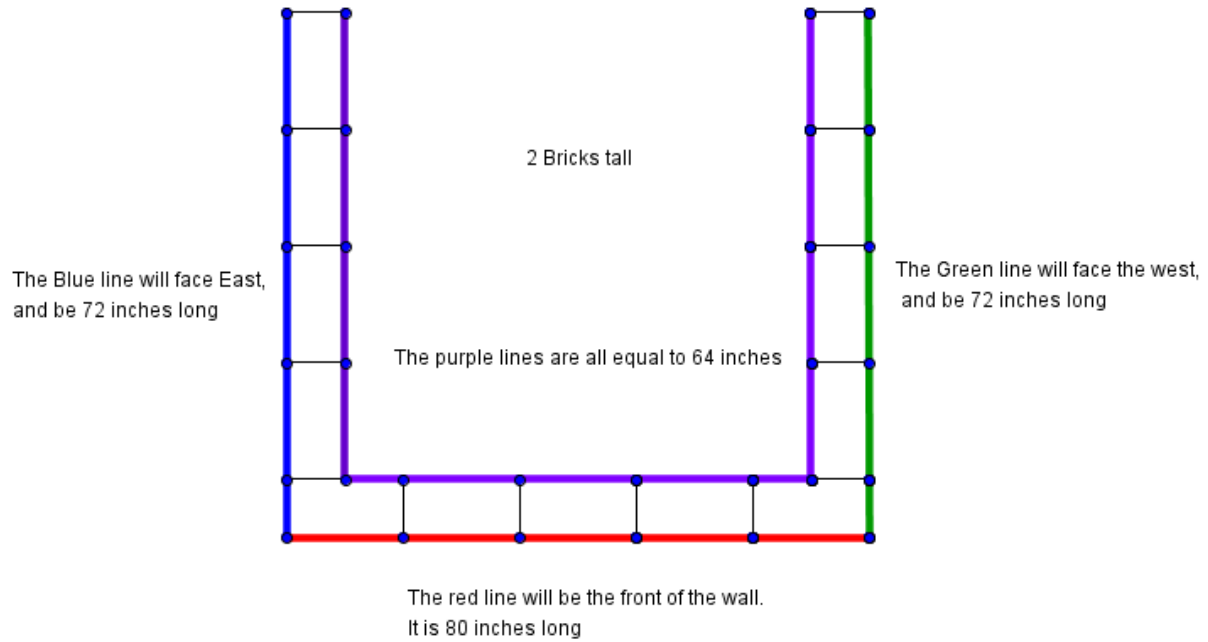
BF

This is an aerial view of the oil container and the wall around it.
From the sensor you have a foot of space before you start the wall.
There are 81 inches in length including the foot distance from the sensor.
the wall comes out 48 inches and its three blocks stacked which is 24 inches high

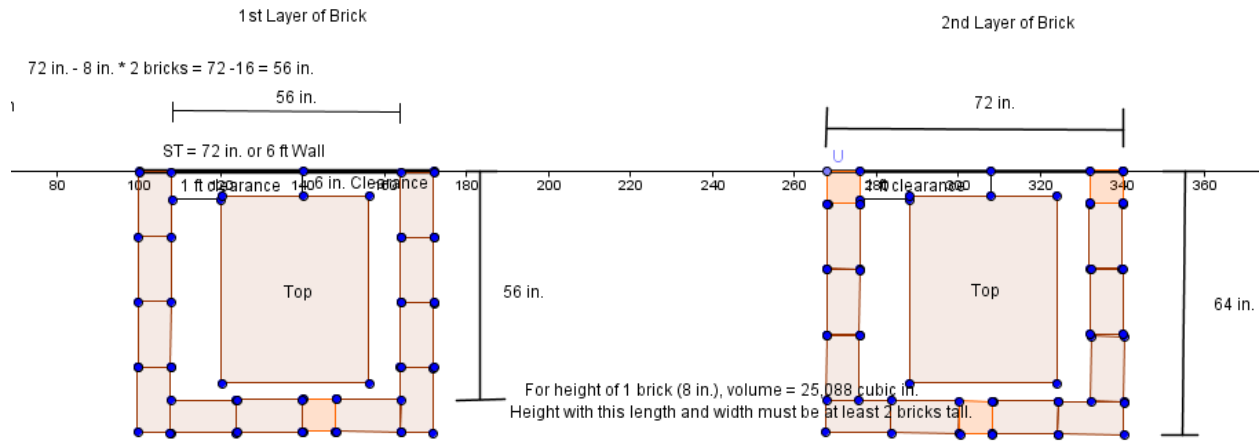


TH

There will be plenty of room for the heater to fit within the brick wall



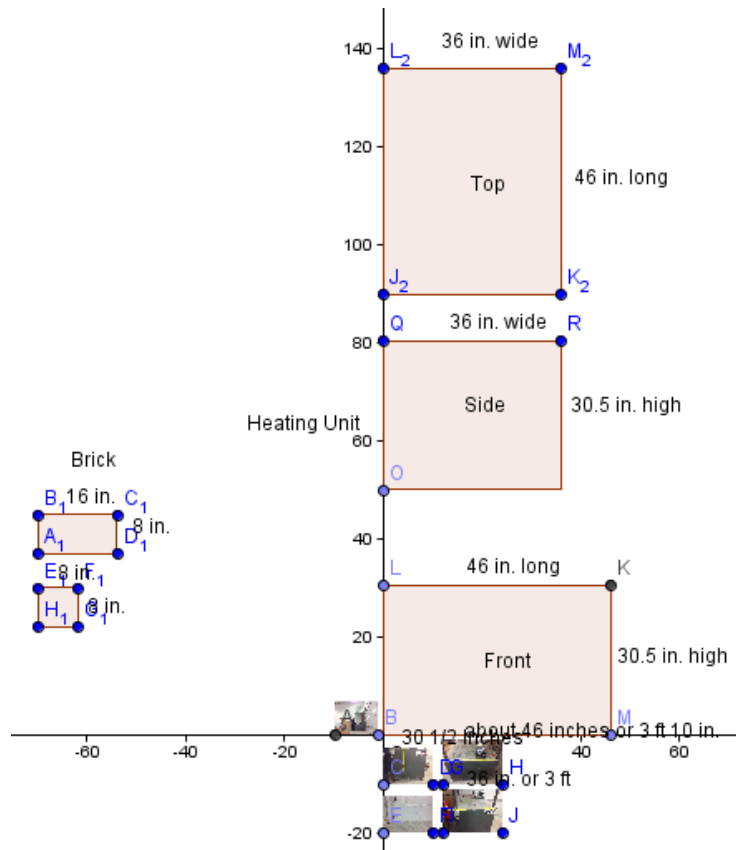
ML



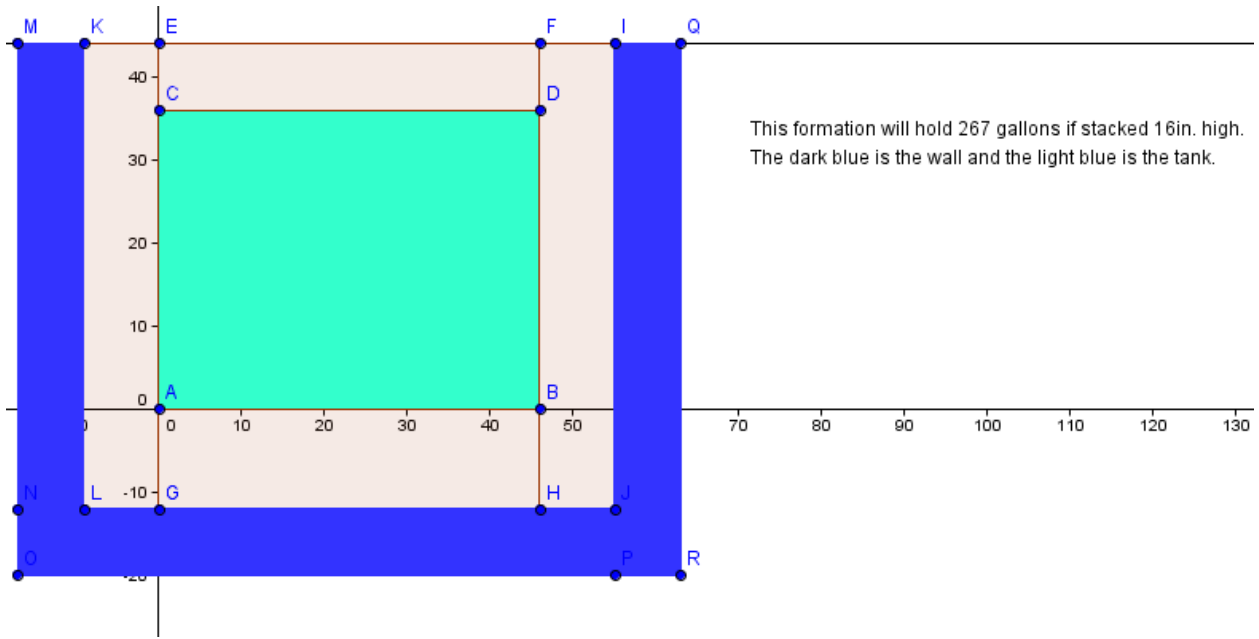
Total Surface area around constructed wall: 3,200 squared in.

Total Volume within construction: 50,176 cubic in. = 217.21 gallons

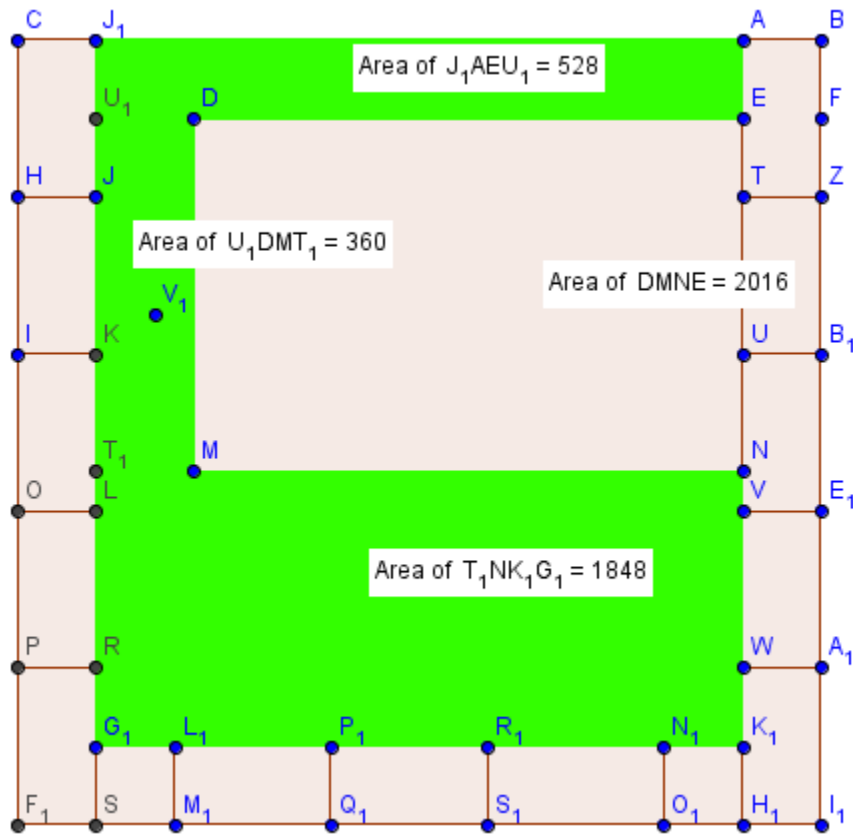
of half blocks = 4, # of blocks to cut = 2



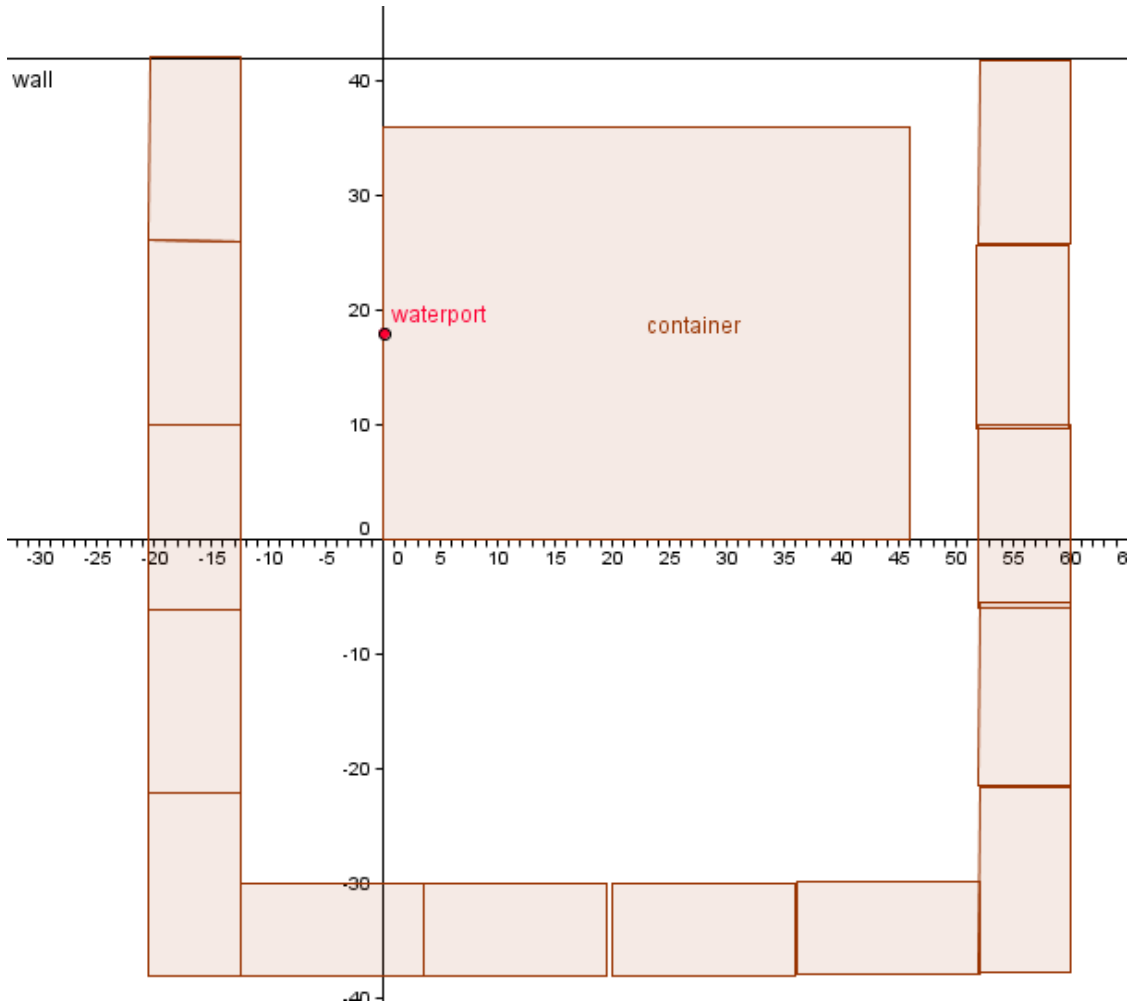
RF



NH



BS



The cinder-block wall should be three blocks high and stacked directly on one another to avoid cutting a cinder-block. I didn't find a possible way to cross the blocks without needing to cut one.

